AMENDMENTS TO THE CLAIMS

The following listing of claims replaces all prior versions, and listings, of claims in this application.

Listing of Claims

1. (**Currently Amended**) A method of generating a protein with a polymeric moiety attached at a favorable attachment site comprising:

a) inputting a set of coordinates for a target protein ~~three-dimensional protein structure with amino acid positions~~ into a computer;

b) inputting a set of coordinates for a plurality of polymeric moieties;

c) selecting a criteria for said favorable attachment site based upon at least one desired characteristic,

d) analyzing said structure using a simulation module comprising the steps of ~~that~~:

i) computationally attaching a plurality of conformers of each of said polymeric moieties to a plurality of amino acids in said target protein; and

ii) disallowing conformers at each of said amino acids on the basis of a distance cutoff;

~~identifies a set of said positions suitable for attachment of a polymer; and~~

~~ii) identifies a set of possible polymers;~~

e) [[to]] generating[[e]] a matrix of said amino acids ~~positions~~ and said polymeric moiety[[s]] that are energetically favorable;

f) selecting based upon said criteria one of said amino acids for attachment of one of said polymeric moieties; and

[[c]]) physically making and screening for said at least one desired characteristic ~~at least one~~ said protein with said polymeric moiety attached at said favorable attachment site.

2. (**Currently Amended**) A method according to claim 1 wherein said set of polymeric moieties are polymeric conformers.

3. (**Currently Amended**) A method according to claim 1 wherein said set of polymeric moieties is generated by chain buildup.

4. (**Withdrawn**) A method according to claim 1 wherein said set of polymeric moieties is generated by utilizing a starting polymeric conformer and perturbing said conformer to generate said set.

5. (**Withdrawn**) A method according to claim 4 wherein said perturbation is done using a Monte Carlo search.

6. (**Withdrawn**) A method according to claim 4 wherein said perturbation is done using a molecular dynamics method.

7. (Original) A method according to claim 1, wherein said protein is a therapeutic protein.

8. (**Currently Amended**) A method according to claim 1, wherein said polymeric moiety is pharmaceutically acceptable.

9. (**Currently Amended**) A method according to claim 1, wherein said polymeric moieties comprises [[is]] polyethylene glycol (PEG).

10. (**Currently Amended**) A method according to claim 1, wherein said polymeric moiety has a range of about 1000 daltons to about 100,000 daltons.

11. (**Currently Amended**) A method according to claim 1, wherein said polymeric moiety is branched.

12. (**Withdrawn**) A method according to claim 1, wherein said polymeric moiety is unbranched.

13. (**Currently Amended**) A method according to claim 1, wherein said polymeric moiety is labile.

14. (Previously Presented) A method according to claim 1, wherein said simulation module includes Monte Carlo, molecular dynamics or combinations thereof.

15. (**Cancelled**)